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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/530,717

04/08/2005

Shuichi Kubota

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EXAMINER

LEE, GILBERT Y

ART UNIT

PAPER NUMBER

3673

MAIL DATE

DELIVERY MODE

08/20/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/530,717

Applicant(s)

KUBOTA ET AL.

Examiner

Gilbert Y. Lee

Art Unit

3673

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9, 13, 15 and 16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☒ Claim(s) 13, 15 and 16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 April 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 8/2/07.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/24/07 has been entered.

Specification

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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3. Claims 1-4 and 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maeda et al. (US Patent No. 5,499,825) in view of von Bonin (US Patent No. 5,382,387) and Hutchings et al. (US Patent No. 6,102,995).

Regarding claims 1 and 2, the Maeda et al. reference discloses a spherical annular seal member which is used particularly in an exhaust pipe spherical joint, comprising:

a spherical annular base member (10) defined by a cylindrical inner surface (e.g. surface labeled at 11), a partially convex spherical surface (12), and large- (e.g. right most diameter in Fig. 1) and small (e.g. left most diameter in Fig. 1) diameter-side annular end faces of said partially convex spherical surface; and

an outer layer formed integrally with said partially convex spherical surface of said spherical annular base member, said spherical annular base member including a reinforcing member (13) made from a compressed metal wire net and a heat-resistant material (Col. 6, Lines 54-58) filling meshes of said metal wire net of said reinforcing member, compressed in such a manner as to be formed integrally with said reinforcing member in mixed form, and containing expanded graphite (Col. 4, Lines 22 and 23), said outer layer including a lubricating composition constituted of at least boron nitride and at least one of alumina and silica (Col. 4, Lines 35-38), an outer surface of said partially convex spherical surface exposed to an outside in said outer layer being formed into a smooth lubricating sliding surface (15) in which said lubricating composition and said reinforcing member are integrated in mixed form.

However, the modified Maeda et al. reference fails to explicitly disclose the addition of an organic phosphorus compound and the wt. % of the heat resistant material.

The von Bonin reference, a graphite material having phosphate (additional binders) and ortho-phosphoric acid (Col. 1, Lines 45-52 and column 2, Lines 45-54), discloses the wt. % of the expanded graphite being 100-5% by weight (Col. 2, Lines 16-20). Note that because the wt. % of the graphite is 100-5%, the wt. % of the phosphorus compound will be 0-95%.

It would have been obvious to one of ordinary skill in the art at the time of the invention to provide an organic phosphorus compound and make the heat-resistant material contain 0.1 to 10.0 wt. % of said organic phosphorus compound and 90.0 to 99.9 wt. % of said expanded graphite in order to provide good binder properties (von Bonin, Col. 1, Lines 55-57)

However, the modified Maeda et al. reference fails to explicitly disclose the specific organic phosphorus compounds.

The Hutchings et al. reference, an expandable graphite material, discloses the organic phosphorus compound being an organic phosphonic acid (Hutchings et al., Col. 7, Line 64 - Col. 8, Line 19).

It would have been obvious to one of ordinary skill in the art at the time of the invention to provide phosphonic acid or phosphoric ester to the modified Maeda et al. reference in view of the teachings of the Hutchings et al. reference in order to provide a fire resistant composition (Hutchings et al., Col. 13, Lines 47-53).

Regarding claim 3, the Maeda et al. reference, as modified in claim 2, discloses the lubricating composition containing 70-90 wt.% of boron nitride and 10-30 wt.% of at least one of alumina and silica (Maeda et al., Col. 5, Lines 35-38).

Regarding claim 4, the Maeda et al. reference, as modified in claim 2, discloses the lubricating composition further containing polytetrafluoroethylene resin (Maeda et al., Col. 5, Lines 16-28).

Regarding claim 5, the Maeda et al. reference, as modified in claim 2, discloses the lubricating composition containing a mixture consisting of 70 - 90 wt. % of boron nitride and 10 - 30 wt. % of at least one of alumina and silica, and further containing not more than 200 parts by weight of polytetrafluoroethylene resin with respect to 100 parts by weight of said mixture (Maeda et al., Col. 2, Lines 56-63).

Regarding claim 6, the Maeda et al. reference, as modified in claim 2, discloses the lubricating composition containing a mixture consisting of 70 - 90 wt. % of boron nitride and 10 - 30 wt. % of at least one of alumina and silica, and further containing 50 to 150 parts by weight of polytetrafluoroethylene resin with respect to 100 parts by weight of said mixture (Maeda et al., Col. 2, Lines 56-63).

Regarding claim 7, the Maeda et al. reference, as modified in claim 1 and 2, discloses the heat-resistant material containing said expanded graphite and said organic phosphorus compound of said spherical annular base member being exposed on the cylindrical inner surface (Maeda et al., Col. 2, Lines 40-56). Note that the reinforcing member is covered by the heat resistant material.

Regarding claim 8, the Maeda et al. reference, as modified in claims 1 and 2, discloses the reinforcing member being constituted by said metal wire net of said spherical annular base member being exposed on said cylindrical inner surface (Maeda et al., Col. 2, Lines 40-56).

Regarding claim 9, the Maeda et al. reference, as modified in claim 1 and 2, discloses the heat-resistant material containing said expanded graphite and said organic phosphorus compound of said spherical annular base member being exposed on at least one of said annular end faces (Maeda et al., Col. 2, Lines 40-56). Note that the reinforcing member is covered by the heat resistant material.

Allowable Subject Matter

4. Claims 13, 15, and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. The following is a statement of reasons for the indication of allowable subject matter: claims 13, 15, and 16 disclose specific formulas of the compositions. The closest prior art, Maeda et al. (US Patent No. 5,499,825), fails to disclose the specific formulas and there is no motivation, absent the applicant's own disclosure, to modify the Maeda et al. reference in the manner required by the claims.

Response to Arguments

6. Applicant's arguments filed 7/6/07 have been fully considered but they are not persuasive.

With regards to the applicant's argument of the amendments to claims 1 and 2, the arguments are not persuasive because the combination of Maeda et al. in view of von Bonin and Hutchings et al. discloses the limitations required by claims 1 and 2.

Conclusion

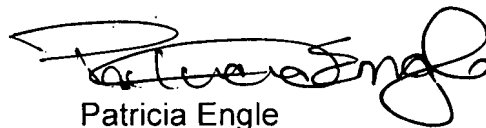
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gilbert Y. Lee whose telephone number is 571-272-5894. The examiner can normally be reached on 8:00 - 4:30, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patricia L. Engle can be reached on (571)272-6660. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

GL
August 15, 2007

A handwritten signature in black ink, appearing to read 'Patricia Engle', with a large, stylized loop at the end.

Patricia Engle
Supervisory Examiner
Tech. Center 3600